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A Discussion of Seminal Vesiculitis in the Bull

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A Discussion of

Seminal Vesiculitis In The Bull

with Two Case Reports

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DURING the past 30 years the importance of the male in problems of reproduction has been re-evaluated and with the development of artificial insemination has come to be regarded with equal or even greater concern than the importance of the female. There are many references to support the view that the bull might be an active spreader of genital infections which may temporarily or permanetly impair the fertility of infected females (Gilman, 1922; Williams, 1943; Webster, 1932; and Lagerlöf, 1938).

The seminal vesicles are perhaps the most common seat of infection and pathological changes in the bovine male reproductive tract. This discussion is presented, therefore, to stress the importance of frequent and routine rectal examinations of bulls.

CAUSE

Many organisms have been recovered from the bovine seminal vesicles. Lagerlöf (1936) has reported abscesses of one or both vesicles due to infection by tuberculosis and streptococci. Williams (1943) and Webster (1932) have shown that in America and New Zeland streptococci infections in the seminal vesicles and testicles have been transmitted to cows in which they result in a serious cervicitis. In a bacteriological examination of these bulls after slaughter, streptococic infection was generally proved in the seminal vesicles. Roberts (1956) has reported several cases of seminal vesiculitis in which *Pseudomonas aeruginosa* was the organism recovered. Williams et al. (1924) described a case of seminal vesiculitis from which *Corynebacterium pyogenes* was found.

ANATOMY

According to Arey (1942) the seminal vesicles are exclusively a male organ which arise as an outpouching from the mesonephric (Wolffian, which later becomes the deferent) ducts in fetuses of 13 weeks and gain a muscular wall from adjacent mesenchyme.

Trautmann and Fiebiger (1949) report that the seminal vesicles are branched tubular glands which are lobulated in ruminants. The large lobules are separated by heavy muscular septa; each lobule consists of wide sac-like branching passages. These open centrally into sacculated but narrower excretory ducts which

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give rise to the main excretory duct in the caudal part of the gland.

In the adult bull, Sisson and Grossman (1953) report that the seminal vesicles measure about four to five inches in length, two inches in width in their largest part, and an inch or more in thickness. The excretory duct opens at the colliculus seminalis, just lateral to the ductus deferens. The structure of the seminal vesicles is masked by a thick capsule of fiberous tissue and unstriped muscle which maintains it in its bent condition and also sends trabeculae between the alveoli.

The excretory duct opens at the colliculus seminalis, just lateral to the ductus deferens.

The seminal vesicles may routinely be palpated rectally in the normal bull as two distinct pliable lobulated structures, one on each side of the neck of the bladder.

SYMPTOMS AND CLINICAL MANIFESTATIONS

The acute form of inflammation is detectable on rectal palpation in some instances by enlargement of one or both glands. Pressure on the part causes distinct evidence of pain and flinching. Chronic inflammation is evidenced by a distinct enlargement and firmness of the gland. Abscessation of the seminal vesicles may result in the presence of pus in the semen. Symptoms are indefinite. Extreme enlargement may interfere with defecation or urination. If the condition occurs while the bull is in service, there may be a reluctance to copulate because of pain. Except for sterility caused by this condition, the best method of recognition is by rectal palpation or autopsy.

PATHOLOGY

Cystic degeneration of one or more lobules or the entire gland may be observed. The entire gland may become filled with small abscesses or the entire gland may be one large necrotic encapsulated mass. This may involve one or both of the glands. When only one gland is involved the outlet or duct of the involved gland may be shut off by inflammation, preventing the escape of pus in the semen, thus not affecting the fertility of the bull. In most cases exudate passes out with the semen and impairs fertility and may be a potential source of infection to the cows bred. Williams et al. (1941) have cited a case in which extensive adhesions of the bladder, seminal vesicles, and rectum had occured, accompanied by a fistula between the seminal vesicle and the rectum.

CASE HISTORIES

Case No. 1

May 22, 1956, a one and a half year old Hereford bull was presented at the Stange Memorial Clinic for a genital examination. The history was that the bull had been loaned out and was now being returned because he was not breeding cows.

There was a circular necrotic ulceration of the prepucial orifice. This was treated locally. The bull persistently strained and passed only small amounts of urine.

On rectal palpation a large bladder-like structure was found in the pelvic cavity which was very firm and thick-walled. It was about the size of a grapefruit. When pressure was applied to the mass through the rectal wall a cup-full of creamy pus dripped from the end of the penis.

A diagnosis of seminal vesiculitis was made and the bull was taken to slaughter June 4, 1956. The genital organs were obtained from the packing house and dissected. The right seminal vesicle was found greatly enlarged and glandular tissue had undergone complete degeneration and destruction resulting in an abscess surrounded by a thick fibrous capsule which still retained its connection with the colliculus seminalis in the pelvic urethra. The pus was cultured and *Carynebacterium pyogenes* was recovered. *C. pyogenes* was not isolated from any other part of the reproductive tract. The left seminal vesicle was not involved and appeared normal.

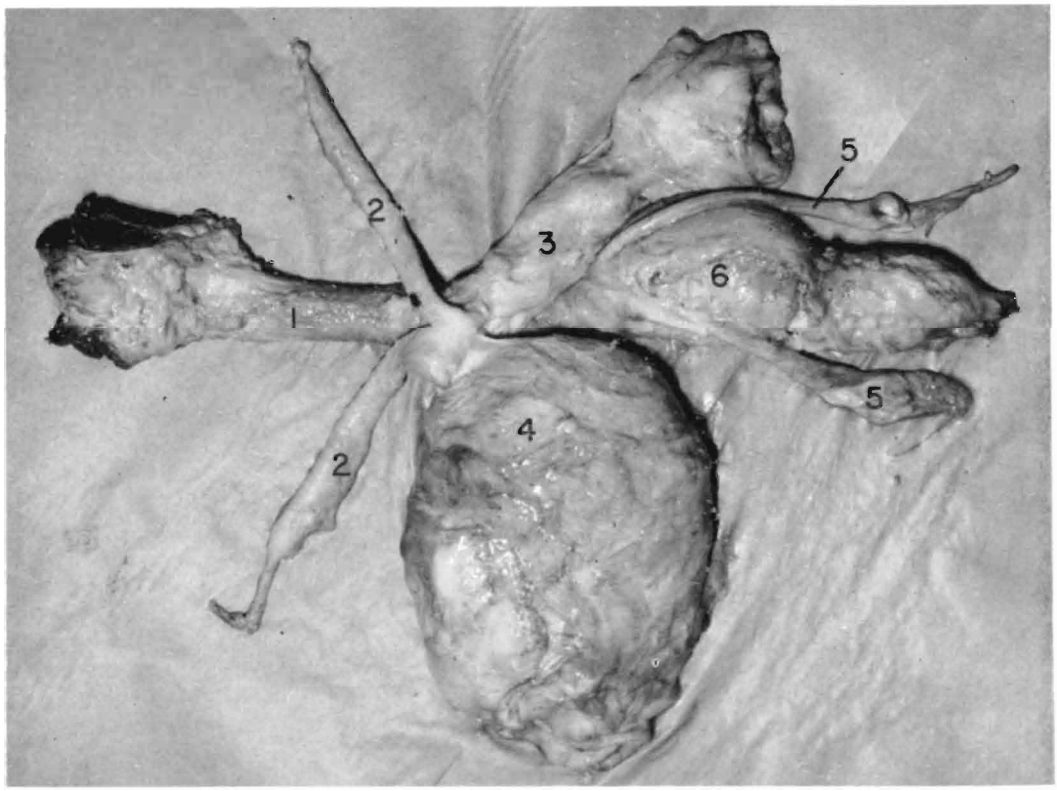

Fig. 1. Reproductive tract from case No. 1. Right seminal vesicle is greatly enlarged. (1) pelvic urethra; (2) ductus deferentes; (3) left seminal vesicle, normal; (4) right seminal vesicle, abscessed; (5) ureters; (6) urinary bladder.

Case No. 2

December 3, 1956, a three year old Angus bull was presented at the Stange Memorial Clinic for a genital examination. The history was that the bull would not breed. The bull had been active and had produced one calf crop the year before but had gradually become reluctant to mount a cow, and had recently refused to mount at all.

A collection of semen was attempted by means of the electro-ejaculator. This was unsuccessful because the bull seemed to experience pain from the electrical stimulation and became unruly.

On rectal palpation it was discovered that the seminal vesicles were very hard, firm, large and painful.

The bull showed symptoms of distress by holding his tail out away from the body in an unnatural position and pacing and stepping with small steps, particularly with the hind feet. The bull urinated normally.

The owner decided to send the bull to slaughter because he had other bulls and had already gotten one calf crop from this bull.

On post mortem examination it was found that the seminal vesicles were bilaterally enlarged but the glandular tissue had not undergone any visible, gross degeneration. Bacteriological studies of the glandular tissue did not reveal the presence of any bacterial agents.

DIAGNOSIS

Definite symptoms probably occur after pathological changes have become extensive. Extensive involvement of the of the seminal vesicles is easily detectable as an indistinct mass, ventral to the rectum and dorsal to the neck of the bladder. Reliable means for very early diag-

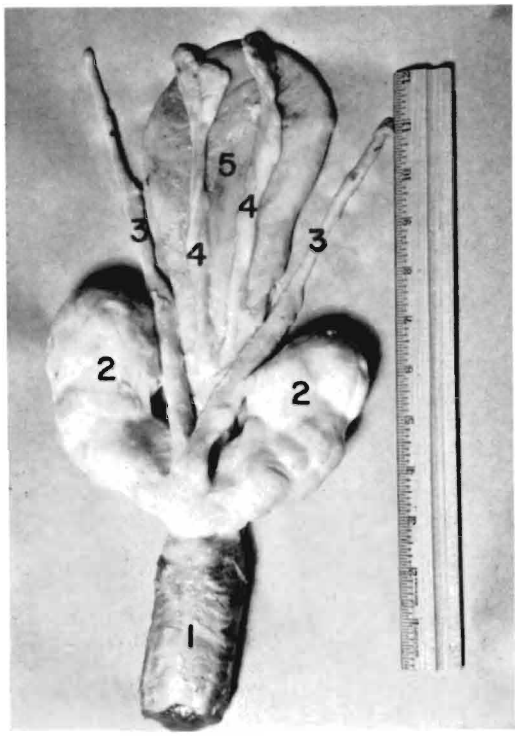

Fig. 2 — Reproductive tract from case No. 2. Both seminal vesicles are enlarged, hard, and abnormally firm. (1) pelvic urethra; (2) enlarged seminal vesicles; (3) Ductus deferentes; (4) ureters; (5) urinary bladder.

nosis are not available. When pathology is extensive enough to be recognized per rectum probably many females have been infected unless copulation was prevented because of pain.

PROGNOSIS AND TREATMENT

The prognosis of cases of inflammation of the seminal vesicles has been discussed by Williams (1943) and Roberts (1956) as being guarded to poor. There is no specific remedy or treatment. Parenteral use of sulfonamides and antibiotics has been tried. Sexual rest is indicated. Under most conditions, males with infections of the seminal vesicles should be discarded as breeding animals.

DISCUSSION

Because of the potential threat to the reproductive health of cows served by bulls suffering from seminal vesiculitis, early diagnosis and immediate sexual rest is important. For this reason it is essensial to make a routine practice of rectally examining the seminal vesicles of all bulls being examined for sale, health insurance, fertility examination, or any other reason, so that these bulls may be recognized early and retired from service soon enough to prevent virulent abscess exudate from being deposited in the reproductive tracts of susceptible cows with the semen.

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Pasture and stock rotation is recommended to counteract the effects of internal parasites of livestock. Grass growing on infected soil is considered a carrier of many stomach worms.

The antibiotic, actidione, controls the fungus causing cherry leaf-spot. It also protects the leaf from subsequent infection after eradicating the disease.